COxSwAIN COmpressive Sensing for Advanced Imaging and Navigation

Completed Technology Project (2013 - 2016)

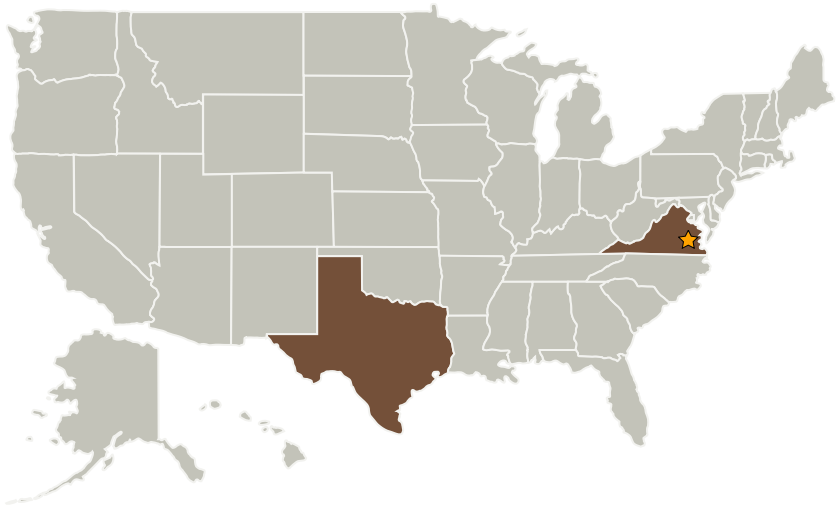
Project Introduction

A new imaging architecture that incorporates elements of compressive sensing and computational imaging in order to reevaluate the design space of imaging systems with the power and bandwidth constraints of small satellite platform is the subject of this task. In order to increase the technology readiness level of these systems, the program will utilize ground based development and balloon flights to demonstrate several imaging systems that fit the limitations of these small spacecraft (CubeSats, picosats). Successful demonstration should enable new, low cost, science platforms as well as improvements in operations and communications of those power and bandwidth restricted spacecraft.

Anticipated Benefits

Our approach should enable new, low cost, science platforms as well as improvements in operations and communication.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Texas A & M University-College Station(Texas A&M)	Supporting Organization	Academia	College Station, Texas

Primary U.S. Work Locations	
Texas	Virginia

Project Transitions

October 2013: Project Start

April 2016: Closed out

Closeout Summary: NTRS Doc: 20160001623

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Spacecraft Technology

Project Management

Program Director:

Christopher E Baker

Program Manager:

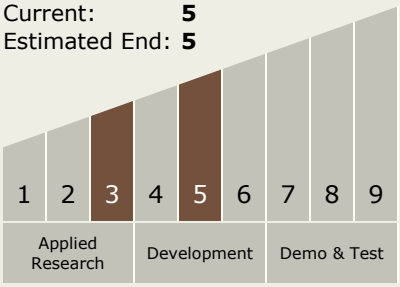
Roger Hunter

Principal Investigator:

Richard Kurwitz

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors

Target Destination

Earth